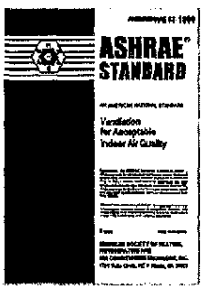
Revising ASHRAE Standard 62

What, Why & How?



Outline of Presentation

- Where are we and how did we get here?
- How is 62-1999 different from 62-1989?
- What changes are in the process right now?
- How are we doing it (procedurally)?

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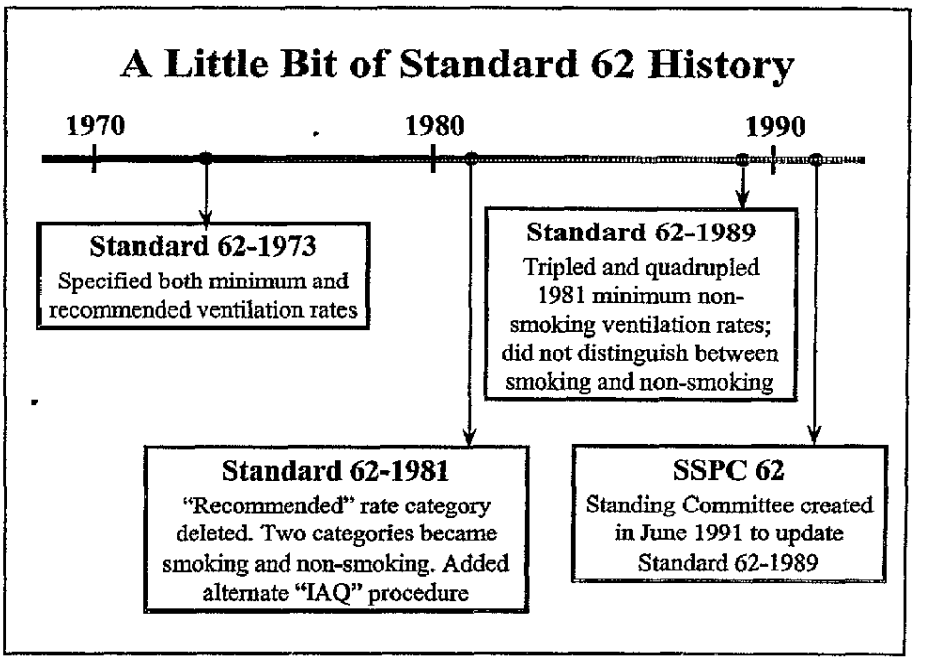
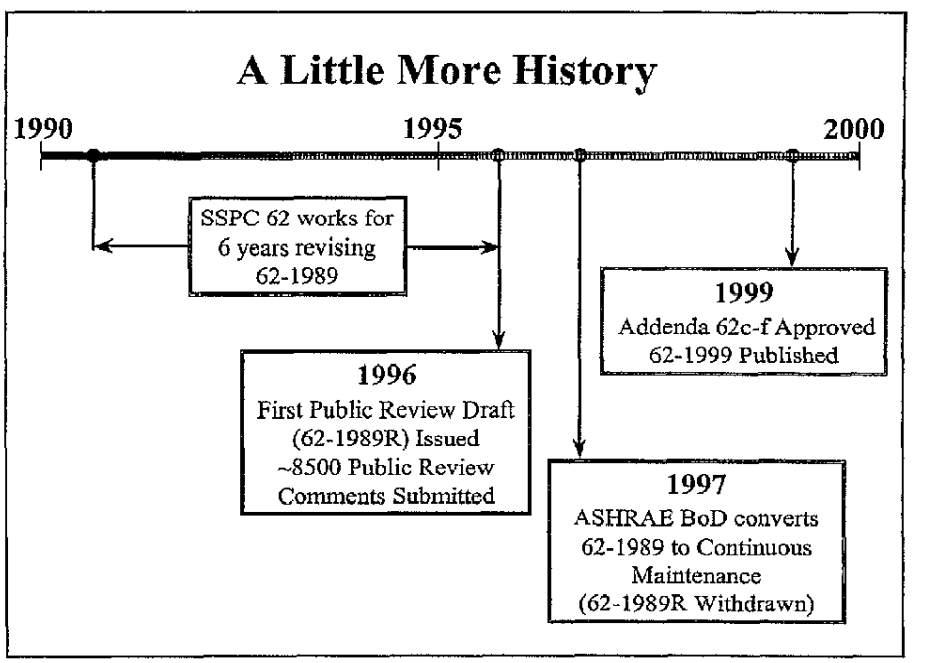
Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001





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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

And ...

- Standards Committee split Standard 62 into:

  Standard 62.1...
  - Commercial and institutional spaces
  - High-rise residential spaces

  Standard 62.2...
  - Residential buildings < 3 stories
  - Single-family dwellings
  - Currently out for public review

And also ...

- BOD directed SSPC 62.1 to develop 3 documents:

Standard 62.1
- Code-intended document

User's Manual
- To assist users of the code
- To be developed under contract

Guideline
- State-of-the-art guidance for those who want it
- To be developed by SSPC

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Health and Comfort

- Purpose of ASHRAE Standard 62

  1973: Specifies minimum & recommended ventilation air quantities for the preservation of the occupants' health, safety, and well-being.

  1981: Specify IAQ & minimum ventilation rates which will be acceptable to human occupants & will not impair health.

  1989/1999: Specify minimum ventilation rates & IAQ that will be acceptable to human occupants and are intended to minimize the potential for adverse health effects.

- Definition of Acceptable IAQ (62-1989 & 1999):

  Air in which there are no known contaminants at harmful concentrations as determined by cognizant authorities and with which a substantial majority (80% of more) of the people exposed do not express dissatisfaction.

Health and Comfort

- Report to ASHRAE Board from Ad hoc Committee on Health Impacts in Standards (2/00)

  ASHRAE standards should and do consider health impacts when setting the criteria for an acceptable indoor air environment. This includes setting minimum ventilation requirements and related measures such as source control. Health impacts are interwoven throughout our standards and guidelines and removing this information would abrogate our responsibilities to our membership and the general public.

- Motion approved by ASHRAE Board (2/00)

  BOD affirms the implied policy that ASHRAE Standards shall consider health impacts where appropriate.

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Current status

- Converting Standard 62-1999 into Standard 62.1
  - Minimum requirements in code-language; not a code
  - Working under "Continuous Maintenance" procedures
- Developing a guideline on ventilation & IAQ
  - Title, purpose and scope approved (Guideline 19P)
- Contractor will develop users manual
  - Work statement developed; ready for ASHRAE staff
  - Monitoring subcommittee in place

Why Revise Standard 62?

- Board of Directors and Standards Committee told us to convert it to a code language document
- 99% of Standard 62-1999 went out for public review in 1986; we know more now
- Provide more comprehensive treatment of ventilation and IAQ
  - Acceptable IAQ depends on design, construction, installation, commissioning, operation & maintenance

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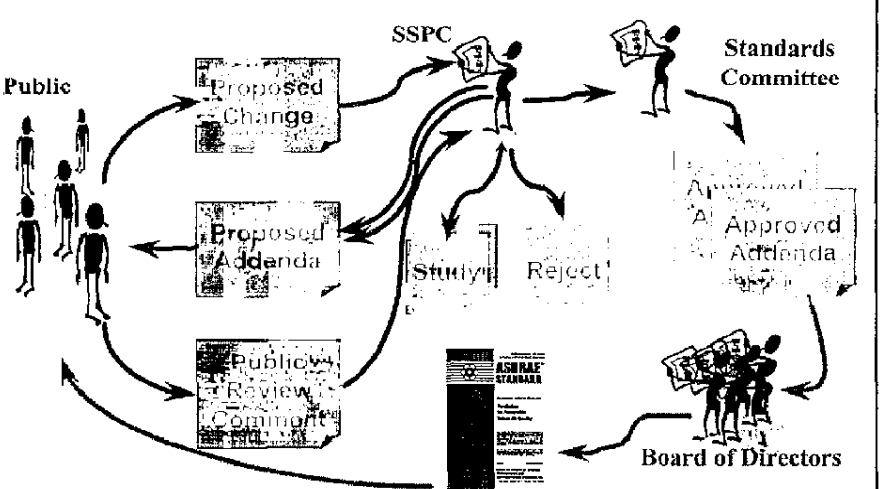
Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

What is Continuous Maintenance?

- Before June 1997: Periodic Maintenance
  - Revise entire document at one time
  - Try to reissue entire standard every 5 to 10 years
- After June 1997: Continuous Maintenance
  - Revise incrementally by addenda
  - Issue addenda as approved
  - Republish revised Standard every 3 years (or so), like model building codes

How Does Continuous Maintenance Work?



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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Why Continuous Maintenance?

- Reduce controversy?
  - Evolution rather than revolution
  - Isolate issues; focus efforts of committee and concerns of commenters
  - Simplify the public review process
- Facilitate updates
  - Easier to incorporate new information
- Concerns about 62R
  - Complexity
  - Code versus Standard

Downsides to Continuous Maintenance?

- Can be hard to keep up with latest addenda
- Potential for confusion; several addenda impacting on the same issue
- Each change requires independent approval, review and comment; paperwork
- Standard 62-1989 was not a good starting point for a code-intended document

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Progress to Date

- Four addenda approved and published
  - ASHRAE Standard 62-1999
- Addendum 62p approved June 2000
- 19 others through, headed for or in public review
- About 6 more still under development
- Guideline outline developed
- Draft work statement for Users Manual

Addenda Priorities

- Change to code-language document
  - Minimum requirements only
  - Delete vague and non-mandatory language
  - Goal: Code-language standard by 2001
- Update to reflect new information
- Incorporate new purpose and scope for 62.1
  - Delete residential (after approval of 62.2)
  - Delete industrial spaces

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

How do addenda happen?

1) Draft at subcommittee level
   - Based on proposed change submitted to SSPC
   - Or developed by subcommittee
   - Many topics obvious since revising whole standard
2) Subcommittee votes forward to main
   - More discussion and changes
   - Possibly sent back to subcommittee
3) Main committee votes for TC review
   - Comments coordinated by TC liaisons
   - More comments from SSPC
   - Not required by ASHRAE

How do addenda happen?

4) Subcommittee votes to main for Public Review
5) Main recommends for Public Review
   - More discussion and changes
   - Possibly sent back to subcommittee
6) Concurrence by Standards or Board Policy Comm
   - New procedures
   - Potentially sent back to us for more work
7) Out for public review via ASHRAE web page
   - Typically 60 days

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

How do addenda happen?

8) Public review comments addressed
- Comments sent to chair, subcommittee chair, addendum "champion" and any member that asks
- Draft responses developed by champion
- Subcommittee votes responses forward to main
- Main approves responses (or sends them back)
- Often involves changes to addendum (editorial or substantive)
- If substantive, need another public review of those (or the whole thing)

How do addenda happen?

9) Responses to commenters
- Send responses to commenters
- Commenters resolved, resolved (but not happy) or unresolved

10) Committee stays with addendum or revises for another public review

11) Approval for publication
- Committee recommends for publication
- Concurrence by Standards Comm, Technology Council and Board of Directors (option for appeal to BOD)
- ASHRAE sends to ANSI for their approval (ANSI appeals option)

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

How we vote on things?

- Standards actions (recommendations to publish) and Interpretations
  - Majority of voting members; 2/3s of those voting
- Other actions
  - Recommendation for public review; responses to comments; revisions of draft addenda; amendments to standards actions
  - Majority of those voting (public review requires majority of membership)
- Two voting methods
  - Committee meeting; roll call on standards actions
  - Letter ballot; reconsideration if any negative votes

Interpretations

- Anyone can submit a request to interpret standard
  - Interpretation, not to change content (wording)
  - Not for potential revisions, justifications for requirements, checking plans
- Interpretations subcommittee exists to develop draft response for consideration by main committee
- Approval by main committee
  - Majority of voting members; 2/3s of those voting
- Currently 37 interpretations of 62-1999

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Who Votes on What?

- Project Committee Voting Members (PCVM)
  - Main committee motions, e.g. public review, publication
  - Subcommittee motions (recommendations to main)
- Project Subcommittee Voting Members (PSVM)
  - Subcommittee motions (recommendations to main)
- Organizational members (PCVM, PSVM or liaison)
  - Represent perspective of relevant organizations
- Consultants (nonvoting)
  - Provide expertise to committee on specific issues
- Technical Committee (TC) Liaisons (nonvoting)
  - Provide 2-way communication between TCs and SSPC
- Everyone encouraged to participate in discussions.

First Group of Approved Addenda

Approved for publication, January 1999
Standard 62-1999 versus 62-1989

- Addendum 62c
  - Thermal comfort requirements not included in standard.
  - Delete requirement to comply with Standard 55
- Addendum 62d
  - Add caveats to scope: acceptable IAQ not necessarily achieved even if all requirements are met because of:
    - » diversity of sources and contaminants in indoor air.;
    - » many other factors that may affect occupant perception and acceptance of indoor air quality, such as air temperature, humidity, noise, lighting and psychological stress; and
    - » range of susceptibility in the population.

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

First Group of Approved Addenda

- Addendum 62e:
  - Delete the statement in Ventilation Rate table that rates accommodate a "moderate amount of smoking"
  - Appeals denied by ASHRAE BOD and ANSI BSR and ANSI Appeals Board
- Addendum 62f:
  - Makes it clear that CO_2 is not a contaminant of concern with respect to health
  - 1000 ppm guideline value deleted and replaced with 700 ppm above outdoors as indicator of body odor acceptability by "visitors"

Other Addenda in the Approval Process

- Addendum 62b:
  - Modify scope with reference to standards application to existing buildings
  - 2 public reviews; preparing responses to comments
- Addendum 62g:
  - Requirements for separating smoking-permitted areas
    - » Airflow/pressure relations; signage; exhaust ETS to outdoors
  - 2 public reviews; approved responses to comments

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Other Addenda in the Approval Process

- Addendum 62h:
  - Converts alternate IAQ Procedure to code language
    - » Performance approach where design is based on controlling contaminant levels
  - 2 public reviews; preparing responses to comments
- Addendum 62i:
  - Establishes when the Ventilation Rate (prescriptive) and IAQ Procedures can and must be used
    - » Always an option; must use when taking credit for air cleaning or reduced source strengths
  - 2 public reviews; approved responses to comments

Other Addenda in the Approval Process

- Addendum 62j:
  - Requirements for Natural Ventilation systems
    - » Accessible openings, at least 4% of floor area
    - » Eliminates "vague" performance requirement
  - 2 public reviews; approved responses to comments
- Addendum 62k:
  - Covers application and compliance of standard to new and existing buildings
  - Geared toward code applications
  - 2 public reviews; preparing responses to comments

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Other Addenda in the Approval Process

- Addendum 62l:
  - New section on construction and system start-up
    - » Construction filters; prevent contaminant migration to occupied spaces; testing & balancing
  - 1 public review; approved responses to comments
- Addendum 62m:
  - New section on operation and maintenance
    - » Must create O&M manual and follow it
  - 1 public review; approved responses to comments
- Addendum 62n:
  - Revised procedures for determining design ventilation rates under Ventilation Rate Procedure
  - 1 public review; 2nd public review anticipated

Other Addenda in the Approval Process

- Addendum 62o:
  - Design guidance for determining design ventilation rates in spaces where smoking is permitted
    - » Focus on controlling odors, not health
  - Currently out for public review
- Addendum 62p:
  - Revision of material on combustion air requirements
    - » Must provide adequate combustion air; must exhaust vented appliances to the outdoors
  - Approved for publication (June 2000)

PM3006449993

Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Other Addenda in the Approval Process

- Addendum 62q:
  - Modifies definitions for clarity
  - Deletes common and unused terms
  - 1 public review; approved responses to comments
- Addendum 62r:
  - Requirements for assessing outdoor air quality and filtration when outdoor particles are elevated
  - Recommended for public review; at Standards Comm
- Addendum 62s:
  - Requirements for equipment-related particle filtration
    - » Must filter upstream of condensate-producing devices; efficiency at least MERV 6 per Standard 52.2 (25% dust spot)
  - 1 public review; approved responses to comments

Other Addenda in the Approval Process

- Addendum 62t:
  - Requirements related to condensate management
    - » Drain pan design, carryover from cooling coils, access for inspection and cleaning
  - Currently out for public review
- Addendum 62u:
  - Requirements related to ventilation system control
    - » System shall maintain hourly average supply and minimum outdoor airflow under any load conditions
  - Currently out for public review

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Other Addenda in the Approval Process

- Addendum 62v:
  - Requirements related to air distribution systems' ability to deliver outdoor air to occupied spaces
    - » Design to accommodate TAB; outdoor air delivery in plenum mixing systems; documentation for TAB
  - 1 public review; preparing responses to comments
- Addendum 62w:
  - Requirements for airstream surface materials to minimize potential for microbial growth
    - » Resistance to mold growth per UL and ASTM methods
  - 1 public review; preparing responses to comments

Other Addenda in the Approval Process

- Addendum 62x:
  - Requirements to minimize contribution of building envelope to indoor air quality problems
    - » Control water vapor diffusion, liquid water penetration, infiltration and radon entry; insulation to prevent condensation; prevent airflow from parking garages
  - 1 public review; preparing responses to comments
- Addendum 62y
  - Requirements for "classifying air" to limit recirculation options
  - Currently out for public review

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Source: https://www.industrydocuments.ucsf.edu/docs/fhjj0001

Other Addenda in the Approval Process

- Addendum 62z (8B):
  - Requirements for air cleaning when outdoor ozone is elevated
  - Recommended for public review; at Standards Comm
- Addendum 62aa (7A):
  - Requirements rain protection at intake and intake-to-source separation
  - Recommended for public review; at Standards Comm

Other Addenda Under Development

- 6A: Requirements for local & supplemental exhaust
- 6H: Equations to take credit for air cleaning
- 7E: Limit indoor RH to 60%; maintain positive pressure in humid climates
- 7F: Prescribes occupant-based demand controlled ventilation (DCV), including CO_2-sensing schemes
- 7H: Requirements for humidifiers & evap coolers
- 8A: Requirements for design documentation

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